

Assessment Report for BGES Undergraduate Programs in GEOLOGY: 27 May, 2004

1. Goals

Geology majors will possess a broad general knowledge of the fundamental facts and principles in all of the major areas of Geology by the end of their senior year, as well as advanced knowledge in the major areas of Geology, as defined by standard textbooks.

This goal was developed by the Department: initially by the chair and associate chairs, undergraduate program directors, and the Undergraduate Committee on Curriculum & Academic Standards [UCCAS], then discussed and approved by a formal vote at a faculty meeting. Because of the relatively small number of majors (less than 20) in the current program, the Department decided to use standard textbook topics as the knowledge base. No changes in the goals have been made since that time.

2. Outcomes

The Department decided to define outcome measures as *satisfactory improvement in performance on a standardized test from entry to completion of the program*. This outcome measure was adopted by the Department in the same way and at the same time as the determination of the goals.

3. Research

The current testing procedure (implemented only since Fall, 2003) uses an objective exam of 65 multiple-choice questions. The questions used in the pool were selected from faculty input and then subsequently approved by faculty that teach in this area. There are two versions of the exam, and they are administered alternately over semesters.

The exam is administered at two time points in a student's career: at entry, operationally defined as the beginning of the first required course for majors (GEO 100, Introductory Geology), and just before graduation. The last point is administered by requiring all majors to complete a 0-credit course (GEO 499, Exit Evaluation) that consists solely of the assessment examination before graduation.

All of these direct measures are collected as aggregate values for the entire set of students writing the exam in each semester. No attempt is made to track the performance of individual students.

In addition to these direct outcome measures, indirect evidence sometimes comes in the course of formal exit interviews with the Geology Undergraduate Program Director [in the BGES Department, all Environmental Science majors are advised by the same person] and the other three faculty in the program.

4. Findings

A set of standard statistics are calculated for each set of data and appropriate comparisons are made. In particular, overall average scores always will be compared between the entry and exit categories as new data accumulate each semester. The only data (Fall, 2003, and Spring, 2004) show average scores of 42.6% and 31.2% at entry (based on data for N=132 and N=145 students, respectively). Unfortunately, only one student has completed the program who started after the mandatory exit evaluation was introduced (in Fall, 2003). That single student's score was 81.5%.

It is clear that students in the introductory course have a poor initial knowledge of geological science facts and principles. At least one graduate has acquired a good knowledge of geology.

5. Review

Results of the data analysis are reviewed by the Undergraduate Program Director, Associate Chair, and Chair, as well as by members of the Department's undergraduate committee (UCCAS). Any significant findings are reported to the faculty generally for discussion and action.

6. Actions

There are too few results and too few majors in this program to justify any actions at this time.

Anticipated difficulties in ensuring student compliance with taking the outcome assessment exam just before graduation resulted in the creation of the Exit Evaluation course requirement for the major, approved in Spring, 2003.